

APPLICATION
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TITLE: CONTAINER WITH MOVABLE SIDEWALL

APPLICANT: JASON D. EGE, LINDA HOWE, DEBRA A. LINDERHOLM,
MARY SANDQUIST AND LAURA YANTOS

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Container with Movable Sidewall

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of the filing date of provisional application serial no. 60/416,082, filed on October 3, 2002, the content of which is incorporated herein by reference.

BACKGROUND

5 Food products often must be transported prior to consumption, particularly in the decorative food products industry. The effort and cost associated with the design and creation of a decorative food product, such as a wedding cake, may be wasted if the final product is damaged or altered during transportation. Generally, the appearance of the decorative food product is central to the overall satisfaction of the purchaser, yet certain existing containers are
10 designed in a manner that increases the potential for damaging the product.

A typical packaging container for a decorative food product consists of a box-shaped package with an open top and a lid that may be used to cover the opening after the product is placed inside the box. The food product is often damaged while being lowered into the container. Decorative wedding cakes often include multiple levels of cakes separated by thin
15 columns, which results in a tall and delicate structure. The decorative coating on such a cake may be smeared, or the cake partially compressed, if lowered into the packaging container incorrectly, thus damaging the appearance of the final product before display or consumption.

SUMMARY

A container may include a substantially planar horizontal base, and multiple,
20 substantially vertical sidewalls, wherein at least one of the vertical sidewalls is a movable sidewall adjustable between a closed position and an opened position, such that an interior cavity of the container is accessible from at least two directions when the movable sidewall and a lid are both in an opened position. In one embodiment, each vertical sidewall may be aligned with an edge of the base, the base and vertical sidewalls thereby defining the interior cavity of the
25 container. A lid may be adapted to enclose the interior cavity in a closed position and to provide access to the interior cavity in an opened position. A support structure may be included within the interior cavity to retain an item, such as a bakery item, in a substantially upright position during transport of the item in the container.

Embodiments can realize one or more of the following advantages. An item can be inserted into and removed from the container by moving the item in a substantially horizontal plane, and while maintaining the item in a substantially upright position. The ability to insert an item into the container by moving the item in a substantially horizontal plane, as opposed to, for example, lowering the item into the container, is particularly desirable for relatively tall and/or unstable items, such as a tiered wedding cake. By inserting the item into the container along a horizontal plane, the risk of damaging the item, for example, marring the decorative icing of a wedding cake, is reduced. An optional support structure can further support a base or substrate upon which the item is mounted, for example, a cardboard base upon which a wedding cake is resting. Supporting the base reduces the risk of damage to the item during storage and transportation, in particular, making it less likely the item will shift, tilt or lean during transport. For certain fragile items, for example, glass objects, additional support can be used, such as a foam insert or foam packing chips, to further reduce the risk of movement and/or damage during transport. The container can include convenient means to handle the container, for example, slotted hand openings on opposing sides of a container having a box-like shape.

The details of one or more embodiments of the invention are set forth in the accompanying drawings and the description below. Other features, objects, and advantages of the invention will be apparent from the description and drawings, and from the claims.

DESCRIPTION OF DRAWINGS

FIG. 1 is a perspective view of a container.
FIG. 2A is a side view of the container of FIG. 1.
FIG. 2B is a plan view of the base of the container of FIG. 2A.
FIG. 3 is a perspective view of the container of FIG. 1 with the container lid removed.
FIG. 4 is a perspective view of the container of FIG. 3 with a movable sidewall in an opened position.
FIG. 5 is a perspective view of the container of FIG. 4 with a movable sidewall in an opened position.
FIG. 6 is a side view of the container of FIG. 1.
FIG. 7A shows a perspective view of a container with the lid partially raised.

FIG. 7B shows the container of FIG. 7A with the lid and a movable sidewall in an opened position.

FIG. 8 shows a container with a movable sidewall in an opened position.

Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

A container for storing and/or transporting fragile items or items that must remain in an upright position, for example, a decorative cake, includes a base and sidewalls, forming an interior cavity, and a lid that can be opened and closed. At least one of the sidewalls can also be opened, closed or removed, to allow access to the interior cavity from at least one side of the container, in addition to access through the top of the container, when the lid is opened.

Referring to FIG. 1, in one embodiment, a container 10 includes a base 15, a first and a second stationary sidewall 20a, 20b, a first and a second movable sidewall 30a, 30b, and a removable lid 50. The movable sidewalls 30a, 30b, provide access to the interior of the container 10, facilitating insertion and removal of an item for storage and/or transport, and reducing the risk of damage to the item during insertion, removal and transport.

Referring to FIGS. 2A, 2B and 3, when the container 10 is in an upright position, the base 15 extends in a substantially horizontal plane and has four edges: opposing edges 16 and opposing edges 17. The first and second movable sidewalls 30a, 30b extend in a substantially vertical direction and are aligned with the opposing edges 16 of the base 15, and the first and second stationary sidewalls 20a, 20b extend in a substantially vertical direction and are aligned with the opposing edges 17 of the base 15. A box-like structure having an interior cavity is thereby formed, and the movable sidewalls 30a, 30b are separated by the adjacent, stationary sidewalls 20a, 20b.

Referring to specifically to FIG. 3, the movable sidewall 30a is hinged to the base 15. In this embodiment, the base 15 and movable sidewalls 30a, 30b are formed from a continuous piece of bendable material, with bends formed at the edges 16 of the base 15 to form a hinged connection. The movable sidewall 30a can move between a closed position (as shown in FIG. 3) to an opened position (as shown in FIG. 4) by rotating the movable sidewall 30a about the hinged connection.

When the movable sidewall 30a is in the opened position, as shown in FIG. 4, first and second support panels 24a, 24b, are exposed. Each support panel 24a, 24b forms a hinge-like connection to an adjacent stationary sidewall 20a, 20b. In this embodiment, a stationary sidewall 20a and an adjacent support panel 24a are formed from a continuous piece of bendable material, and the hinge-like connection is formed from a substantially vertical bend aligned with a corner of the base 15. In other embodiments, the stationary sidewall 20a and the support panel 24a can be formed from separate pieces of material and connected in any convenient manner permitting the support panel 24a to move relative to the stationary sidewall 20a. The support panels 24a, 24b interrupt travel of the movable sidewall 30a to assist in holding the movable sidewall 30a in place, and to provide additional sturdiness to the container 10.

In the embodiment shown in FIG. 5, the support panels 24a, 24b can be swung open, to provide access to the interior cavity of the container 10 when the movable sidewall 30a is opened. An opening 25a, 25b is formed in each support panel 24a, 24b and a corresponding slot 32 is formed in the movable sidewall 30a. The size and position of the opening 25a, 25b formed in each support panel 24a, 24b is such that when the support panels are in a closed position, as shown in FIG. 4, the openings 25a and 25b together form a slot that corresponds in size and location to the slot 32 formed in the movable sidewall 30a. As shown in FIG. 3, when the movable sidewall 30a is in a closed position, the slot 32 in the movable sidewall 30a aligns with the opening formed by the openings 25a, 25b in the two support panels 24a, 24b. The slot 32, and a similar slot formed on the opposite movable sidewall 30b, can be used as handles to lift the container 10.

Flaps 22 extending from the openings 25a, 25b in each respective support panel 24a, 24b can be manipulated through the slot 32 in the movable sidewall 30a, as shown in FIG. 3, so as to retain the movable sidewall 30a in a closed position, and particularly when a user grips the container 10, using the slot 32 as a handle (see FIG. 6). Attachment means other than the support panels 24a, 24b and flaps 22 can be used to retain the movable sidewall 30a in the closed position.

In the embodiment shown in FIG. 5, the movable sidewall 30a can be adjusted to the opened position after the flaps 22 are manipulated through, and freed from, the slot 32. As shown in FIG. 5, the container 10 is positioned so the base 15 extends in a substantially horizontal direction 12. Thus, an item to be stored or transported in the container 10 can rest on

the base 15 in an upright position. When the container 10 is manipulated to the configuration shown in FIG. 5 (e.g., the movable sidewall 30a in the opened position), a delicate item, such as a multi-level cake that must be kept upright, can be moved in the substantially horizontal direction 12 for insertion into, or removal from, the container 10, thereby minimizing the risk of inadvertently contacting the sidewalls 20a, 20b.

The movable sidewall 30b can also be opened and closed in a similar manner as the movable sidewall 30a, described above. Depending on the manner by which the stationary sidewalls 20a, 20b are maintained in a vertical position, it can be possible to have both movable sidewalls 30a and 30b open at the same time, further facilitating access to the interior cavity of the container. For example, if the container is formed from a rigid, plastic material, it may be possible to open both opposing movable sidewalls 30a and 30b open at the same time, with the lid 50 either in an opened or closed position, while maintaining the stationary sidewalls 20a, 20b in a substantially vertical position. In other embodiments, two adjacent sidewalls can be movable, while two or more additional sidewalls are stationary.

Referring to FIG. 5, optionally, an inner support structure 60 can be used to stabilize an item inside the container 10. In the embodiment shown, the outer edges 62 of the support structure 60 are configured to fit within the confines of the stationary sidewalls 20a, 20b and the movable sidewalls 30a, 30b, and the edges 62 of the support structure 60 can abut against the sidewalls 20a, 20b, 30a, and 30b when the movable sidewalls 30a, 30b are in the closed position. The inner support structure 60 can include an opening 65 that is configured to fit around the base of the transported item. The base or carrying tray holding the item can be placed within the opening 65 and guided into the container 10 in a substantially horizontal direction, as shown by arrows 12. The support structure 60 prevents jostling and shifting of the item while being transported inside the container 10.

In the embodiment shown, the opening 65 has a circular shape that can accommodate an item resting on a circular base, such as a decorative cake, which can then be secured within the opening 65. The inner support structure 60 is not limited to such an embodiment. For example, the inner support structure 60 can be integrally formed with the base 15 of the container 10 such that an item can be guided into the container 10 and positioned within the opening 65.

Referring to FIGS. 7A and 7B, an embodiment of a container 70 is shown, having a lid 72 connected to a movable sidewall 74. The container 70 includes a base 78, which is formed

from a continuous piece of material with the movable sidewall 74 and the lid 72. In the embodiment shown, the material is bendable, and a hinge-like connection is formed between the base 78 and the movable sidewall 74 by bending the material along an edge of the base 78. Similarly, a hinge-like connection is formed between the movable sidewall 74 and lid 72 by bending the material along an edge of the movable sidewall 74.

Lip 73 on the lid 72 can cooperate with sidewalls 76 to hold the lid 72 and movable sidewall 74 in place when in the closed position. As shown in FIG. 7B, the lid 72 and movable sidewall 74 can be adjusted to a substantially horizontal position to provide access to an interior cavity of the container 70. Other means can be used in place of the lip 73 to retain the lid 72 and movable sidewall 74 in a closed position, such as adhesive tabs and cooperating slots, fasteners, a friction fit, a strap, flaps and the like. In another embodiment, the lid 72 and the connected movable sidewall 74 can be detachable from the balance of the container 70.

The container 10 can be configured with various length, width, and height dimensions to accommodate various contents, for example wedding cakes, of different shapes and sizes. The opening 65 of the inner support structure 60 can be formed in circular, rectangular, or other shape so as to accommodate various carrying trays or bases. The base 15 of the container 10 can be of a shape other than a square or rectangle, for example, an octagon to form an eight-sided box structure. For certain fragile items, for example, glass objects, additional support can be used inside the container 10, such as a foam insert or foam packing chips, to further reduce the risk of movement and/or damage to the item during transport.

The lid 50 can be configured as a substantially planar, horizontal substrate, as shown in FIG. 1, or in any other convenient manner, particularly, to adapt it an item to be contained within the container. For example, the lid 50 can be domed outwardly, slanted, curved inwardly, include ridges for stacking, and the like.

The container 10 can be constructed of any suitable material, including paper, cardboard, plastic, or metal. The lid 50 is optional, and can be completely removable or can be attached, hingedly or otherwise, to at least one of the stationary sidewalls 20a, 20b or movable sidewalls 30a, 30b.

A movable sidewall 30a, 30b can be retained in a closed position, in abutted relation with at least one of the adjacent, stationary sidewalls 20a, 20b using a friction fit, a strap, flaps, tabs, adhesive fasteners or other attachment means, which can eliminate the need for the support

panels 24a, 24b, depending on the required strength of the container 10. A movable sidewall 30a, 30b that is movable between an opened and a closed position can be moved in a manner other than hingedly, such as in swivel or slideable movement. A hinge-like connection can be formed from bending a continuous bendable material, as described above, or by attaching a hinge to the adjacent surfaces being connected, or by any other convenient means.

Multiple movable sidewalls can be used, for example, two adjacent sidewalls can open outwardly, for example, by way of a hinge-like connection to the base, and include tabs that cooperate with neighboring walls or panels when in a closed position to maintain a vertical position.

In various embodiments, the movable panel 30a is configured to swing horizontally. For example, referring to FIG. 8, a support panel 86 (which functions as a movable sidewall) can move relative to a stationary, vertical sidewall 88 as shown by arrow 89. In an opened position (as shown), the support panel 86 has been swung outwardly to allow access to the interior cavity of the container 82. In this embodiment, the support panel 86 rotates about a hinged connection with the adjacent stationary sidewall 88, for example, a score formed in a bendable material forming both the support panel 88 and the stationary sidewall 88. The support panel 86 can be retained in a closed position by flap 83 and lid 50. When in a closed position (not shown), flap 83 extends along the internal surface of sidewall 87 and the lid 50 operates to prevent panel 86 and flap 83 from moving substantially relative to sidewall 87. Optionally, the flap 83 may extend along the entire width of sidewall 87 to facilitate proper alignment during a closing operation.

A number of embodiments of the invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. Additionally, the container 10 and support structure 60 can be configured to hold different types of items, including but not limited to electronics, dolls, and other such items. Accordingly, other embodiments are within the scope of the invention.